Discipline: MECHANICAL	Semester: 4th	Name of the Teaching Faculty: BIKASH MURMU,SR.LECTURER
Subject: MT	No. of days/per week class allotted: 4	Semester From date: 04.02.2025 To date: 17.05.2025 No of weeks: 15
Week	**Class Day**	**Theory Topics:**
1st	1st	**Tool Materials;** Composition of various tool materials
	2nd	Physical properties& uses of such tool materials..
	3rd	**Cutting Tools ;** Cutting action of various and tools such as Chisel, hacksaw blade, dies and reamer
	4th	Turning tool geometry and purpose of tool angle
2nd	1st	Machining process parameters (Speed, feed and depth of cut)
	2nd	Coolants and lubricants in machining and purpose
	3rd	**Lathe Machine ;** Construction and working of lathe and CNC lathe
	4th	Major components of a lathe and their function
3rd	1st	Operations carried out in a lathe(Turning, thread cutting, taper turning internal machining, parting off, facing, knurling),
	2nd	Safety measures during machining
	3rd	Capstan lathe ; Difference with respect to engine lathe
	4th	Major components and their function
4th	1st	Define multiple tool holders
	2nd	Turret Lathe Difference with respect to capstan lathe•
	3rd	Major components and their function.
	4th	Draw the tooling layout for preparation of a hexagonal bolt &bush
5th	1st	**Shaper** ; Potential application areas of a shaper machine
	2nd	Major components and their function
	3rd	CLASS TEST
	4th	Major components and their function . Explain the automatic able feed mechanism.
6th	1st	Explain the construction &working of tool head
	2nd	Explain the quick return mechanism through sketch
	3rd	State the specification of a shaping machine.

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	4th	**Planning Machine ;** Application area of a planer and its difference with respect to shaper
7th	1st	Major components and their functions
	2nd	The table drive mechanism , Working of tool and tool support
	3rd	Clamping of work through sketch.
	4th	**Milling Machine ;** Types of milling machine and operations performed by them and also same for CNC milling machine
8th	1st	Explain work holding attachment
	2nd	Construction & working of simple dividing head, universal dividing head
	3rd	Procedure of simple and compound indexing
	4th	Illustration of different indexing methods
9th	1st	**Slotter** ;Major components and their function
	2nd	Construction and working of slotter machine , Tools used in slotter
	3rd	**Grinding** ; Significance of grinding operations
	4th	Manufacturing of grinding wheels
10th	1st	Criteria for selecting of grinding wheels
	2nd	Specification of grinding wheels with
	3rd	example Working of Cylindrical Grinder• Surface Grinder• Centreless Grinder•
	4th	CLASS TEST
11th	1st	**Internal Machining operations** Classification of drilling machines
	2nd	Working of Bench drilling machine•
	3rd	Pillar drilling machine
	4th	Radial drilling machine
12th	1st	**Boring** Basic Principle of• Boring
	2nd	Boring Basic Principle of• Boring
	3rd	Different between Boring and drilling
	4th	Different between Boring and drilling
13th	1st	**Broaching ;** Types of Broaching(pull type, push type)
	2nd	Types of Broaching(pull type, push type)
	3rd	Advantages of Broaching and applications.
	4th	**Surface finish, lapping** ; Definition of Surface finish.
14th	1st	Description of lapping& explain their specific cutting.
	2nd	Discussion of PYQ
	3rd	Discussion of PYQ
	4th	Discussion of PYQ

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15th	1st	Discussion of PYQ
	2nd	Doubt clearing class
	3rd	Doubt clearing class
	4th	Doubt clearing class

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H.O.D. Mechanical